

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Qin-Yi TONG et al.

SERIAL NO: New Continuation Application

GAU: Unassigned

FILED: Herewith

EXAMINER: Unassigned

FOR: METHOD FOR LOW TEMPERATURE BONDING AND BONDED STRUCTURE

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR 1.97

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

Applicant(s) wish to disclose the following information.

REFERENCES

- ☒ The applicant(s) wish to make of record the references listed on the attached form PTO-1449 (11 Sheets). Copies of the listed references were filed in parent application serial number 09/505,283 filed on February 16, 2000.
- ☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

RELATED CASES

- ☐ Attached is a list of applicant's pending application(s) or issued patent(s) which may be related to the present application. A copy of the patent(s), together with a copy of the claims and drawings of the pending application(s) is attached along with PTO 1449.
- ☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

CERTIFICATION

- ☐ Each item of information contained in this information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.
- ☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned, having made reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this statement.

DEPOSIT ACCOUNT

- ☒ Please charge any additional fees for the papers being filed herewith and for which no check or credit card payment is enclosed herewith, or credit any overpayment to deposit account number 15-0030. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Eckhard H. Kuesters

Registration No. 28,870

Customer Number

22850

Tel. (703) 413-3000
Fax. (703) 413-2220
(OSMMN 05/03)
I:\ATTY\CES\247830US.IDS.doc

Carl E. Schlier

Registration No. 34,426

Form PTO 1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY DOCKET NO. 247830US-20 CONT		SERIAL NO. New CONT Application	
LIST OF REFERENCES CITED BY APPLICANT				APPLICANT Qin-Yi TONG et al.			
				FILING DATE Herewith		GROUP Unassigned	
U.S. PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	AA	3,423,823	01/69	Ansley			
	AB	3,488,834	01/70	Baird			
	AC	3,508,980	04/70	Jackson, Jr. et al.			
	AD	3,534,467	10/70	Sachs et al.			
	AE	3,579,391	05/71	Buie			
	AF	3,587,166	06/71	Alexander et al.			
	AG	3,602,981	09/71	Kooi			
	AH	3,607,466	09/71	Miyazaki			
	AI	3,640,807	02/72	Van Dijk			
	AJ	3,647,581	03/72	Mash			
	AK	3,888,708	06/75	Wise et al.			
	AL	4,649,630	03/87	Boland et al.			
	AM	4,754,544	07/88	Hanak			
	AN	4,970,175	11/90	Haisma et al.			
	AO	4,978,421	12/90	Bassous et al.			
	AP	5,034,343	07/91	Rouse et al.			
	AQ	5,071,792	12/91	Van Vonno et al.			
	AR	5,081,061	01/92	Rouse et al.			
	AS	5,162,251	11/92	Poole et al.			
	AT	5,183,783	02/93	Ohta et al.			
	AU	5,915,167	06/99	Leedy			
	AV	6,133,640	10/00	Leedy			
	AW	4,416,054	11/83	Thomas et al.			
	AX	4,612,083	09/86	Yasumoto et al.			
	AY	5,793,115	08/98	Zavracky et al.			
	AZ	5,760,478	06/98	Bazso et al.			
	BA	5,432,729	07/95	Carson et al.			
	BB	4,617,160	10/86	Belanger et al.			
	BC	5,534,465	07/96	Frye et al.			
	BD	5,070,026	12/91	Greenwald et al.			
	BE	5,489,554	02/96	Gates			
	BF	5,567,657	10/96	Wonjnarowski et al.			
	BG	5,966,622	10/99	Levine et al.			
	BH	5,783,477	07/98	Kish, Jr. et al.			
	BI	6,143,628	11/00	Sato et al.			
	BJ	6,120,917	09/00	Eda			
	BK	4,963,505	10/90	Fujii et al.			
	BL	6,246,068	06/01	Sato et al.			
	BM	6,255,731	11/00	Ohmi et al.			

Form PTO 1449
(Modified)U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

ATTY DOCKET NO.

247830US-20 CONT

SERIAL NO.

New Cont. App.

LIST OF REFERENCES CITED BY APPLICANT

APPLICANT

Qin-Yi TONG et al.

FILING DATE

Herewith

GROUP

Unassigned

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	BN	5,485,540	01/1996	Eda			
	BO	5,548,178	08/1996	Eda et al.			
	BP	5,546,494	08/1996	Eda			
	BQ	5,668,057	09/1997	Eda et al.			
	BR	5,666,706	09/1997	Tomita et al.			
	BS	5,647,932	07/1997	Taguchi et al.			
	BT	5,698,471	12/1997	Namba et al.			
	BU	5,759,753	06/1998	Namba et al.			
	BV	5,747,857	05/1998	Eda et al.			
	BW	5,821,665	10/1998	Onishi et al.			
	BX	5,785,874	07/1998	Eda et al.			
	BY	5,771,555	06/1998	Eda et al.			
	BZ	5,920,142	07/1999	Onishi et al.			
	CA	5,910,699	06/1999	Namba et al.			
	CB	5,982,010	11/1999	Namba et al.			
	CC	5,991,989	11/1999	Onishi et al.			
	CD	6,018,211	01/2000	Kanaboshi et al.			
	CE	6,087,760	07/2000	Yamaguchi et al.			
	CF	6,154,940	12/2000	Onishi et al.			
	CG	6,120,917	09/2000	Eda			
	CH	6,236,141	05/2001	Sato et al.			
	CI	6,270,202	08/2001	Namba et al.			
	CJ	5,503,704	04/1996	Bower et al.			
	CK	6,180,496	01/2001	Farrens et al.			
	CL	5,121,706	06/1992	Nichols et al.			
	CM	6,153,495	11/2000	Kub et al.			
	CN	5,869,354	02/1999	Leedy			
	CO	6,190,778	02/2001	Batz-Sohn et al.			
	CP	5,024,723	06/1991	Goesele et al.			
	CQ	5,841,197	11/1998	Adamic, Jr.			
	CR	5,877,070	03/1999	Goesele et al.			
	CS	5,915,193	06/1999	Tong et al.			
	CT	5,880,010	03/1999	Davidson			

[illegible]

Form PTO 1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY DOCKET NO. 247830US-20 CONT		SERIAL NO. New Cont. App.	
LIST OF REFERENCES CITED BY APPLICANT				APPLICANT Qin-Yi TONG et al.			
				FILING DATE Herewith		GROUP Unassigned	
OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)							
	DF	Schulze et al., "Investigation of Bonded Silicon-Silicon-Interfaces Using Scanning Acoustic Microscopy", Proceedings of the Second International Symposium on Microstructures and Microfabricated Systems, Proceedings Vol. 95-27, pages 309-318, (no date)					
	DG	Tong, et al., "A New type of Materials Combination for System-On-A-Chip Preparation", 1999 IEEE International SOI Conference, pages 104-105, October 1999					
	DH	Kanda et al., "The Mechanism of Field-Assisted Silicon-Glass Bonding", Sensors and Actuators, Vol. A21-A23, pages 939-943, 1990					
	DI	Jiao et al., "Low-Temperature Silicon Direct Bonding and Interface Behaviours", Sensors and Actuators, Vol. A50, pages 117-120, 1995					
	DJ	Berthold, et al., "Wafer-to-Wafer Fusion Bonding of Oxidized Silicon to Silicon at Low Temperatures", Sensors and Actuators, Vol. A68, pages 410-413, 1998					
	DK	Tong et al., "Low Vacuum Wafer Bonding", Electromechanical and Solid-State Letters, Vol. 1, No. 1, pages 52-53, 1998					
	DL	Kissinger et al., "Void-Free Silicon-Wafer-Bond Strengthening in the 200-400°C Range", Sensors and Actuators, Vol. A36, pages 149-156, 1993					
	DM	Arora et al., "Reactive Ion-Etching-Induced Damage in Silicon Using SF ₆ Gas Mixtures", J. Vac. Sci. Technol., Vol. B5, No. 4, pages 876-882, Jul/Aug 1987					
	DN	Field, et al., "Fusing Silicon Wafers with Low Melting Temperature Glass", Sensors and Actuators, Vol. A21-A23, pages 935-938, 1990					
	DO	Bengtsson, et al., "Room Temperature Wafer Bonding of Silicon Oxidized Silicon, and Crystalline Quartz", Journal of Electronic Materials, Vol. 29, No. 7; 2000					
	DP	Amirfeiz, et al., "Formation of Silicon Structures by Plasma-Activated Wafer Bonding", Journal of Electrochemical Society, Vol. 147, No. 7, pages 2693-2698; 2000					
	DQ	Pasquariello, et al., "Oxidation and Induced Damage in Oxygen Plasma in <i>SITU</i> Wafer Bonding", Journal of Electrochemical Society, Vol. 147, No. 7, pages 2699-2703; 2000					
	DR	Pasquariello, et al., "Mesa-Spacers: Enabling Nondestructive Measurement of Surface Energy in Room Temperature Wafer Bonding", Journal of the Electrochemical Society, Vol. 174, No. 6, pages 2343-2346; 2000					
	DS	Petzold, et al., "Interface Strength Characterization of Bonded Wafers", Proceedings of the Third International Symposium on Semiconductor Wafer Bonding: Physics and Applications, Proceedings Vol. 95-7, pages 380-389; (no date)					
	DT	Bagdahn, et al., "Characterization of Directly Bonded Silicon Wafers by Means of the Double Cantilever Crack Opening Method", Proceedings of the Fourth International Symposium on Semiconductor Wafer Bonding: Science, Technology and Applications, Proceedings Vol. 97-36, pages 291-298; (no date)					
Examiner				Date Considered			
*Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.							

Form PTO 1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY DOCKET NO. 247830US-20CONT		SERIAL NO. New Cont. App.	
LIST OF REFERENCES CITED BY APPLICANT				APPLICANT Qin-Yi TONG et al.			
				FILING DATE Herewith		GROUP Unassigned	
OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)							
	DU	P. AMIRFEIZ, et al., The 1999 Joint International Meeting, Vol. 99-2, Abstract No. 963, 1 page, "FORMATION OF SILICON STRUCTURES BY PLASMA ACTIVATED WAFER BONDING," October 17-22, 1999					
	DV	F.J. KUB, et al., The 1999 Joint International Meeting, Vol. 99-2, Abstract No. 1031, 1 page, "A DOUBLE-SIDE IGBT BY LOW TEMPERATURE WAFER BONDING," October 17-22, 1999					
	DW	S. BENGTSSON, et al., International Conference on Compliant & Alternative Substrate Technology, p. 10, "LOW TEMPERATURE BONDING," September 1999					
	DX	S. FARRENS, Electromechanical Society Proceedings, Vol. 97-36, pps. 425-436, "LOW TEMPERATURE WAFER BONDING," 1997					
	DY	S. FUJINO, et al., Jpn. J. Appl. Phys., Vol. 34, No. 10B, 1 page, "SILICON WAFER DIRECT BONDING THROUGH THE AMORPHOUS LAYER," October 15, 1995					
	DZ	U. GOSELE, et al., Appl. Phys. Lett., Vol. 67, No. 24, pps. 3614-3616, "SELF-PROPAGATING ROOM-TEMPERATURE SILICON WAFER BONDING IN ULTRAHIGH VACUUM," December 11, 1995					
	EA	G. HESS, et al., Appl. Phys. Lett., Vol. 71, No. 15, pps. 2184-2186, "EVOLUTION OF SUBSURFACE HYDROGEN FROM BORON-DOPED Si(100)," October 13, 1997.					
	EB	K.D. HOBART, et al., Applied Physics Letters, Vol. 72, No. 9, pps. 1095-1097, "CHARACTERIZATION OF Si <i>pn</i> JUNCTIONS FABRICATED BY DIRECT WAFER BONDING IN ULTRA-HIGH VACUUM," March 2, 1998					
	EC	H. KIM, et al., Appl. Phys. Lett. Vol. 69, No. 25, pps. 3869-3871, "EFFECTS OF B DOPING ON HYDROGEN DESORPTION FROM Si(001) DURING GAS-SOURCE MOLECULAR-BEAM EPITAXY FROM Si ₂ H ₆ AND B ₂ H ₆ ," December 16, 1996					
	ED	A. PLOESSL, et al., Mat. Res. Soc. Symp. Proc., Vol. 483, PPS. 141-146, "COVALENT SILICON BONDING AT ROOM TEMPERATURE IN ULTRAHIGH VACUUM," 1998					
	EE	B.E. ROBERDS, et al., Electrochemical Society Proceedings, Vol. 97-36, pps. 592-597, "WAFER BONDING OF GaAs, InP, AND Si ANNEALED WITHOUT HYDROGEN FOR ADVANCED DEVICE TECHNOLOGIES," 1997					
	EF	B.E. ROBERDS, et al., Electrochemical Society Proceedings, Vol. 97-36, pps. 598-606, "LOW TEMPERATURE, <i>IN SITU</i> , PLASMA ACTIVATED WAFER BONDING," 1997					
	EG	H. TAKAGI, et al., Appl. Phys. Lett., Vol. 68, No. 16, pps. 2222-2224, "SURFACE ACTIVATED BONDING OF SILICON WAFERS AT ROOM TEMPERATURE," April 15, 1996					
	EH	Q.Y. TONG, et al., Appl. Phys. Lett., Vol. 64, No. 5, pps. 625-627, "HYDROPHOBIC SILICON WAFER BONDING," January 31, 1994					
	EI	Q.Y. TONG, 9 pages, "ROOM TEMPERATURE SILICON AND SiO ₂ COVALENT BONDING IN AMBIENT," December 10, 1999					
	EJ	AMIRFEIZ et al., "Formation of Silicon Structures by Plasma Activated Wafer Bonding", Proceedings of the 5 th Semiconductor Wafer Bonding Symposium, Oct. 1999, 11 pages					
	EK	NAKANISHI et al., "Studies on SiO ₂ -SiO ₂ Bonding with Hydrofluoric Acid -Room Temperature and Low Stress Bonding Technique for Mems- ", IEEE 1998, pp. 609-614					
Examiner						Date Considered	
*Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.							

Form PTO 1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY DOCKET NO. 247830US-20 CONT		SERIAL NO. New Cont. App.	
LIST OF REFERENCES CITED BY APPLICANT				APPLICANT Qin-Yi TONG et al.			
				FILING DATE Herewith		GROUP Unassigned	
OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)							
	EL	Stanchina, et al., "An InP-Based HBT Fab for High-Speed Digital, Analog, Mixed-Signal, and Optoelectronic Ics", IEEE Gallium Arsenide Integrated Circuit Symposium, Technical Digest 1995, pages 31-34, October 29-November 1, 1995					
	EM	Nakamura, et al., "Giga-Bit Dram Cells With Low Capacitance and Low Resistance Bit-Lines on Buried MOSFETs and Capacitors by Using Bonded SOI Technology-Reversed-Stacked-Capacitor (RSTC) Cell", IEDM Technical Digest, Vol. 95, pages 889-892, December 10-13, 1995					
	EN	Lasky, et al., "Silicon-On-Insulator (SOI) by Bonding and Etch-Back", IEDM Technical Digest, Vol. 85, page 684-687, December 1-4, 1985					
	EO	den Besten, et al., "Polymer Bonding of Micro-Machined Silicon Structures", IEEE Micro Electro Mechanical Systems, pages 104-104, February 4-7, 1992					
	EP	Pourahamdi, et al., "Variable-Flow Micro-Valve Structure Fabricated with Silicon Fusion Bonding", IEEE Solid-State Sensor and Actuator Workshop: Technical Digest, pages 144-147, June 4-7, 1990					
	EQ	Bjeletich, et al., "Electrical Characterization of Plasma Bonded SOI", Proceedings of the Fourth International Symposium on Semiconductor Wafer Bonding: Science, Technology, and Applications, Proceedings Vol. 97-36, pages 346-357, (no date)					
	ER	Dekker, et al., "An Ultra Low-Power RF Bipolar Technology on Glass", IEDM Technical Digest, Vol. 97, pages 921-923, December 7-10, 1997					
	ES	Sunada, et al., "The Role of Fluorine Termination in the Chemical Stability of HF-Treated Si Surfaces", Jpn. J. Appl. Phys., Vol. 29, No. 12, pages L2408-L2410, December 1990					
	ET	Yoshimaru, et al., "Interaction Between Water and Fluorine-Doped Silicon Oxide Films Deposited by Plasma-Enhanced Chemical Vapor Deposition", J. Vac. Sci. Technol. A, Vol. 15, No. 6, pages 2915-2922, Nov/Dec 1997					
	EU	Duncan, et al., "Study of Fluorine in Silicate Glass with ¹⁹ F Nuclear Magnetic Resonance Spectroscopy", J. Appl. Phys. Vol. 50 No. 1, pages 130-136, July 1, 1986					
	EV	Rabinovich, et al., "Retention of Fluorine in Silica Gels and Glass", J. Am. Ceram. Soc., Vol. 72, No. 7, pages 1229-1232, 1989					
	EW	Nielsen, et al., "Some Illumination on the Mechanism of SiO ₂ Etching in HF Solutions", J. Electrochem. Soc.: Solid-State Science and Technology, vol. 130, No. 3, pages 708-711, March 1983					
	EX	Tong, et al., "Low Temperature InP Layer Transfer", Electronics Letters, Vol. 35, No. 4, pages 341-342, February 18, 1999					
	EY	Tong, et al., "Semiconductor Wafer Bonding: Recent Developments", Materials Chemistry and Physics, Vol. 37, pages 101-127, 1994					
	EZ	Mazara, et al., "Bonding of Silicon Wafers for Silicon-on-Insulator", J. Appl. Phys., Vol. 64, No. 10, pages 4943-4950, November 15, 1988					
	FA	Bruehl, "Silicon on Insulator Material Technology", Electronics Letters, Vol. 31, No. 14, pages 1201-1202, July 6, 1995					
	FB	(No Author), "C.M.O.S. Devices Fabricated on Buried SiO ₂ Layers Formed by Oxygen Implantation into Silicon", Electronics Letters, Vol. 14, No. 18, pages 593-594, August 31, 1978					
Examiner						Date Considered	
*Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.							

Form PTO 1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY DOCKET NO. <div style="text-align: center; font-weight: bold;">247830US-20 CONT</div>		SERIAL NO. <div style="text-align: center;">New Cont. App.</div>	
LIST OF REFERENCES CITED BY APPLICANT				APPLICANT <div style="text-align: center; font-weight: bold;">Qin-Yi TONG et al.</div>			
				FILING DATE <div style="text-align: center;">Herewith</div>		GROUP <div style="text-align: center;">Unassigned</div>	
OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)							
	FC	Bergman, et al., "Donor-Hydrogen Complexes in Passivated Silicon", Physical Review B, Vol. 37, No. 5, pages 2770-2773, February 15, 1988					
	FD	Mahan, et al., "Characterization of Microvoids in Device-Quality Hydrogenated Amorphous Silicon by Small-Angle X-Ray Scatterin and Infrared Measurements", Physical Review B, Vol. 40, No. 17, pages 12024-12027, December 15, 1989					
	FE	Niwano, et al., "Morphology of Hydrofluoric Acid and Ammonium Fluoride-Treated Silicon Surfaces Studied by Surface Infrared Spectroscopy", J. Appl. Phys., Vol. 71, No. 11, pages 5646-5649, June 1, 1992					
	FF	Borenstein, et al., "Kinetic Model for Hydrogen Reactions in Boron-Doped Silicon", J. Appl. Phys., Vol. 73, No. 6, pages 2751-2754, March 15, 1993					
	FG	Lusson, et al., "Hydrogen Configurations and Stability in Amorphous Sputtered Silicon", J. Appl. Phys., Vol. 81, No. 7, pages 3073-3080, April 1, 1997					
	FH	Pearnton, et al., "Hydrogen In Crystalline Semiconductors", Appl. Phys. A, Vol. 43, pages 153-195, 1987					
	FI	McQuaid, et al., "Passivation, Structural Modification, and Etching of Amorphous Silicon in Hydrogen Plasmas", J. Appl. Phys., Vol. 81, No. 11, pages 7612-7618, June 1, 1997					
	FJ	Bhattacharya, et al., "Transferred Substrate Schottky-Collector Heterojunction Bipolar Transistors: First Results and Scaling Laws for High f_{max} ", IEEE Electron Device Letters, Vol. 16, No. 8, pages 357-359, August 1995					
	FK	Agarwal, et al., "A 277-GHz f_{max} Transferred-Substrate Heterojunction Bipolar Transistor", IEEE Electron Device Letters, Vol. 18, No. 5, pages 228-231, May 1997					
	FL	Lee, et al., "A > 500 GHz f_{max} Transferred-Substrate Heterojunction Bipolar Transistor IC Technology", IEEE Electron Device Letters, Vol. 19, No. 3, pages 77-79, March 1998					
	FM	Lee, et al., "Submicron Transferred-Substrate Heterjunction Bipolar Transistors", IEEE Electron Device Letters, Vol. 20, No. 8, pages 396-398, August 1999					
	FN	Mitani, et al., "A New Evaluation Method of Silicon Wafer Bonding Interfaces and Bonding Strength by KOH Etching", Jpn. J. Applied Phys., Vol. 31, Part 1, No. 4, pages 969-974, April 1992					
	FO	Mitani, et al., "Causes and Prevention of Temperature-Dependent Bubbles in Silicon Wafer Bonding", Jpn. J. Appl. Phys., Vol. 30, No. 4, pages 615-622, April 1991					
	FP	Stengl, et al., "A Model for the Silicon Wafer Bonding Process", Jpn. J. Appl. Phys., Vol. 28, No. 10, pages 1735-1741, October 1989					
	FQ	Lee, et al., "A New Leakage Component Caused by the Interaction of Residual Stress and the Relative Position of Poly-Si Gate at Isolation Edge", IEDM Technical Digest, Vol. 95-683, pages 28.2.1-28.2.4, December 10-13, 1995					
	FR	Spierings, et al., "Diversity and Interfacial Phenomena in Direct Bonding", Proceedings of the First International Symposium on Semiconductor Wafer Bonding: Science, Technology, and Applications Proceedings, Vol. 92-7, pages 18-32, (no date)					
	FS	Yamahata, et al., "Over-220-GHz f_T -AND- f_{max} InP/InGaAs Double-Heterojunction Bipolar Transistors with a new Hexagonal-Shaped Emitter", IEEE Gallium Arsenide Integrated Circuit Symposium, Technical Digest 1995, pages 163-166, October 29-November 1, 1995					
Examiner				Date Considered			
*Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.							

Form PTO 1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY DOCKET NO. 247830US-20 CONT		SERIAL NO. New Cont. App.	
LIST OF REFERENCES CITED BY APPLICANT				APPLICANT Qin-Yi TONG et al.			
				FILING DATE Herewith		GROUP Unassigned	
OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)							
	FT	Höchbauer, et al., "Hydrogen Blister Depth in Boron and Hyrdogen Coimplanted N-type Silicon", Appl. Phys. Lett. Vol. 75, No. 25, pages 3938-3940, December 20, 1999					
	FU	Tong, et al., "Layer Splitting Process in Hydrogen-Implanted Si, Ge, SiC, and Diamond Substrates", Appl. Phys. Lett., Vol. 70, No. 11, pages 1390-1392, March 17, 1997					
	FV	Takagi, et al., "Room-Temperature Bonding of Lithium Nobate and Silicon Wafers by Argon-Beam Surface Activation", Appl. Phys. Lett., Vol. 74, No. 16, pages 2387-2389, April 19, 1999					
	FW	Morita, et al., "Fluorine-Enhanced Thermal Oxidation of Silicon in the Presence of NF ₃ ", Appl. Phys. Lett., Vol. 45, No. 12, pages 1312-1314, December 15, 1984					
	FX	Ljungberg, et al., "Spontaneous Bonding of Hydrophobic Silicon Surfaces", Appl. Phys. Lett., Vol. 62, No. 12, pages 1362-1364, March 22, 1993					
	FY	Meyerson, et al., "Bistable Conditions for Low-Temperature Silicon Epitaxy", Appl. Phys. Lett., Vol. 57, No. 10, pages 1034-1036, September 3, 1990					
	FZ	Tong, et al., "A "Smarter-Cut" Approach to Low Temperature Silicon Layer Transfer", Appl. Phys. Lett., Vol. 72, No. 1, pages 49-51, January 5, 1998					
	GA	von Keudell, et al., "Evidence for Atomic H Insertion into Strained Si-Si Bonds in the Amorphous Hydrogenated Silicon Subsurface from In Situ Infrared Spectroscopy", Appl. Phys. Lett., Vol. 71, No. 26, pages 3832-3834, December 29, 1997					
	GB	Judge, "A Study of the Dissolution of SiO ₂ in Acidic Fluoride Solutions", J. Electrochem. Soc.: Solid State Science, Vol. 118, No. 11, pages 1772-1775, November 1971					
	GC	Tong, et al., "A Model of Low-Temperature Wafer Bonding and its Applications", J. Electrochem. Soc., Vol. 143, No. 5, pages 1773-1779, May 1996					
	GD	Mack, et al., "Analysis of Bonding-Related Gas Enclosure in Micromachined Cavities Sealed by Silicon Wafer Bonding", J. Electrochem. Soc., Vol. 144, No. 3, pages 1106-1111, March 1997					
	GE	Aspar, et al., "Basic Mechanisms Invovled in the Smart-Cut® Process", Microelectronic Engineering, Vol. 36, pages 233-240, 1997					
	GF	Li, et al., "Surface Roughness of Hyrdogen Ion Cut Low Temperature Bonded Thin Film Layers", Jpn. J. Appl. Phys., Vol. 39, Part 1, No. 1, pages 275-276, January 2000					
	GG	Ljungberg, et al., "Modifcation of Silicon Surfaces with H ₂ SO ₄ :H ₂ O ₂ :HF and HNO ₃ : HF For Wafer Bonding Applications", Electrochemical Society Proceedings, Vol. 95-7, pages 163-173, (no date)					
	GH	Michalske, et al., "Closure and Repropagation of Healed Cracks in Silicate Glass", J. Am. Ceram. Soc., Vol. 68, No. 11, pages 586-590, 1985					
	GI	Denteneer, et al., "Microscopic Structure of the Hydrogen-Boron Complex in Crystalline Silicon", Physical Review B, Vol. 39, Nov. 15, pages 10809-10824, May 15, 1989					
	GJ	Gupta, et al., "Hydrogen Desorption Kinetics from Monohydride and Dihydride Species on Silicon Surfaces", Physical Review B, Vol. 37, No. 14, pages 8234-8243, May 15, 1988					
Examiner				Date Considered			
*Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.							

Form PTO 1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY DOCKET NO. 247830US-20 CONT		SERIAL NO. New Cont. App.	
LIST OF REFERENCES CITED BY APPLICANT				APPLICANT Qin-Yi TONG et al.			
				FILING DATE Herewith		GROUP Unassigned	
OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)							
	GK	Plossel, et al., "Wafer Direct Bonding: Tailoring Adhesion Between Brittle Materials", Materials Science & Engineering, Vol. R25, Nos. 1-2, pages 1-88, March 10, 1999					
	GL	Ohmi, et al., "VLSI Interconnects for Ultra High Speed Signal Propagation", Proceedings Fifth International IEEE VLSI Multilevel Interconnection Conference, pages 261-267, June 13-14, 1988					
	GM	Liu, et al., "Current Gain Collapse In Microwave Multifinger Heterjunction Bipolar Transistors Operated at Very High Power Densities", IEEE Transactions on Electron Devices, Vol. 40, No. 11, pages 1917-1927, November 1993					
	GN	Tong, et al., "Smart-Cut®: Recent Advances in Layer Transfer for Material Integration", MRS Bulletin, pages 40-44, December 1998					
	GO	Haisma, "Direct Bonding in Patent Literature", Philips Journal of Research, Vol. 49, No. 1/2, pages 165-170, 1995					
	GP	Spierings, et al., "Surface-Related Phenomena in the Direct Bonding of Silicon and Fused-Silica Wafer Pairs", Philips Journal of Research, Vol. 49, No. 1/2, pages 47-53, 1995					
	GQ	Gillis, et al., "Double-Cantilever Cleavage Mode of Crack Propagation", Journal of Applied Physics, Vol. 35, No. 3 (Part 1), pages 647-658, March 1964					
	GR	Kazor, et al., "Fluorine Enhanced Oxidation of Silicon at Low Temperatures", Appl. Phys. Lett. Vol. 65, No. 12, pages 1572-1574, September 19, 1994					
	GS	Williams, et al., "Mobile Fluoride Ions in SiO ₂ ", Journal of Applied Physics, Vol. 46, No. 2, pages 695-698, February 1975					
	GT	Kasi, et al., "Chemistry of Fluorine in the Oxidation of Silicon", App. Phys. Letters., Vol. 58, No. 25, pages 2975-2977, June 24, 1991					
	GU	Messoussi, et al., "Improvement of Rinsing Efficiency After Sulfuric Acid Hydrogen Peroxide Mixture by HF Addition", Jpn. J. Appl. Phys., Vol. 35, Part 1, No. 4A, pages 1989-1992, 1996					
	GV	Takizawa, et al., "Ultraclean Technique for Silicon Wafer Surfaces with HNO ₃ -HF Systems", Japan Journal of Applied Physics, Vol. 27, No. 11, pages L2210-L2212, November 1998					
	GW	Stengl, et al., "Bubble-Free Silicon Wafer Bonding in a Non-Cleanroom Environment", Japan Journal of Applied Physics, Vol. 27, No. 12, pages L2364-2366, December 1988					
	GX	Abe, et al., "Silicon Wafer Bonding Mechanism for Silicon-on-Insulator Structures", Japan Journal Applied Physics, Vol. 29, No. 12, pages L2311-L2314, December 1990					
	GY	Chu, et al., "Distribution of Irradiation Damage in Silicon Bombarded with Hydrogen", Physical Review B, Vol. 16, No. 9, pages 3851-3859, November 1, 1977					
	GZ	Nishioka, et al., "Dielectric Characteristics of Fluorinated Ultradry SiO ₂ ", Appl. Phys. Lett. Vol. 54, No. 12, pages 1127-1129, March 20, 1999					
	HA	Kouvatsos, et al., "Silicon-Fluorine Bonding and Fluorine Profiling in SiO ₂ Films Grown by NF ₃ -Enhanced Oxidation", Appl. Phys. Lett., Vol. 61, No. 7, pages 780-782, August 17, 1992					
Examiner						Date Considered	
*Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.							

Form PTO 1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY DOCKET NO. 247830US-20 CONT		SERIAL NO. New Cont. App.	
LIST OF REFERENCES CITED BY APPLICANT				APPLICANT Qin-Yi TONG et al.			
				FILING DATE Herewith		GROUP Unassigned	
OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)							
	HB	Khanh, et al., "Nondestructive Detection of Microvoids at the Interface of Direct Bonded Silicon Wafers by Scanning Infrared Microscopy", J. Electrochem Soc. Vol. 142, No. 7, pages 2425-2429, July 1995					
	HC	Tong, et al., "Wafer Bonding and Layer Splitting for Microsystems", Adv. Mater., Vol. 11, No. 17, pages 1409-1425, 1999					
	HD	Maszara, "Silicon-on-Insulator by Wafer Bonding: A Review", J. Electrochem Soc. Vol. 138, No. 1, pages 341-347, January 1991					
	HE	Sun et al., "Cool Plasma Activated Surface in Silicon Wafer Direct Bonding Technology", Journal De Physique, pp. C4-79 to C4-82, September 1988.					
	HF	Goetz, "Generalized Reactive Bonding", Proceedings of the 1 st Semiconductor Wafer Bonding Symposium, 1991, pp. 65-73.					
	HG	Zucker et al., "Application of Oxygen Plasma Processing to Silicon Direct Bonding", Sensors and Actuators A, 36 (1993), pp. 227-231					
	HH	Farrens et al., "Chemical Free Room Temperature Wafer to Wafer Direct Bonding", J. Electrochem. Soc., Vol. 142, No. 11, Nov. 1995, pp. 3949-3955.					
	HI	H. Takagi, et al., "Transmission Electron Microscope Observations of Si/Si Interface Bonded at Room Temperature by Ar Beam Surface Activation", Jpn. J. Appl. Phys. Vol. 38, Part 1, No. 3A, pp. 1589-1594, March 1999					
	HJ	T. Akatsu, et al., "GaAs Wafer Bonding by Atomic Hydrogen Surface Cleaning", Journal of Applied Physics, Vol. 86, No. 12, pp. 7146-7150, December 15, 1999.					
	HK	L. Rayleigh, "A Study of Glass Surfaces in Optical Contact", Proceedings of the Royal Society of London, Series A - Mathematical and Physical Sciences, Vol. 156, pp. 326-349, September 1, 1936					
	HL	M.K. Weldon, et al., "Mechanistic Studies of Silicon Wafer Bonding and Layer Exfoliation", Proceedings of the Fourth International Symposium on Semiconductor Wafer Bonding: Science, Technology, and Applications, Proceedings Vol. 97-36, pp. 229-248, (no date)					
	HM	Dino R. Ciarlo, "High - and Low-Temperature Bonding Techniques for Microstructures", Proceedings of the Second International Symposium on Semiconductor Wafer Bonding: Science, Technology and Applications, Proceedings Vol. 93-29, pp. 313-326, May 1993					
	HN	R.C. Ross, et al., "Physical Microstructure in Device-Quality Hydrogenated Amorphous Silicon", Journal of Non-Crystalline Solids, Vol. 66, pp. 81-86, 1984					
	HO	W.H. Ko et al., "Bonding Techniques for Microsensors", Micromachining and Micropackaging of Transducers, pp. 41-61, 1985					
	HP	Auberton-Herve', et al., "Silicon on Insulator Wafers Using the Smart Cut® Technology", Proceedings of the Eighth International Symposium on Silicon Materials: Science and Technology, Silicon Materials Science and Technology, Vol. 2, Electrochemical Society Proceedings, Vol. 98-1, pp. 1341-1360					
	HQ	Kiyoshi Mitani, "Wafer Bonding Studies of Interface Bubbles and Electrical Characterization", Department of Electrical Engineering, Duke University, 1991					
	HR	D. Graf, et al., "Reaction of Water with Hydrofluoric Acid Treated Silicon (111) and (100 Surfaces", J. Vac. Sci. Technol., A7(3), pp. 808-813, May/June 1989					
Examiner						Date Considered	
*Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.							